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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/726,477 | 12/03/2003 | Sung-Ho Lee | 8836-211 (IE12265-US) | 5894 |

22150 7590 09/26/2005

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| EXAMINER | |
|---|---|
| WALKE, AMANDA C | |
| ART UNIT | PAPER NUMBER |
| 1752 | |

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/726,477 | LEE ET AL. | |
| | Examiner | Art Unit | |
| | Amanda C. Walke | 1752 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *05 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-6 and 9-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 9-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gokocki et al (09-127691) in view of its English language abstracts.

Gokocki et al disclose a photosensitive composition containing a resin having acid-decomposable groups, an optical acid generating agent and a naphthol novolak compound whose mol.wt. is ≤2,000. The acid-decomposable groups are, e.g. tert- butyl ester, tert-butoxycarbonyl, trimethylsilyl ether, trimethylsilyl ester, tetrahydropyranyl ether or tetrahydropyranyl ester. An arbitrary compound generating an acid when irradiated with chemical radiation may be used as the optical acid geneating agent. The naphthol novolak compound is a novolak compd. obtained. by condensing naphthol or its derivative with a carbonyl compound The reference teaches that the compound may be combined with a phenol resin. Based on a spot translation by a USPTO staff member, the resin may contain a phenol derivative as a cross-linking agent. The crosslinker may have its OH groups replaced by protective groups (see 6 on page 30).

Given the teachings of the reference, and the knowledge that phenolic resins are preferred for the bottom layer of bi-layer resist systems, it would have been obvious to one of ordinary skill in the art to prepare the material of Gokochi et al choosing to employ a phenol compound in

combination with the naphthol compound as a the bottom layer of a bi-layer resist system with reasonable expectation of achieving a material having high resolution.

***Response to Arguments***

3. Applicant's arguments filed 7/5/2005 have been fully considered but they are not persuasive. Applicant has argued that the material of the reference fails to teach the use of a thermal acid generator. As discussed above, the reference teaches a resin composition employed in a method including the baking and exposure steps of the instant invention. While the composition is referred to a photosensitive, the *optical* acid generators taught are also known thermal acid generators, and the material is employed in the same type of method, therefore the rejection is maintained. The Yasunami et al (6,777,161) reference teaches a similar composition comprising thermal acid generators, which are some of the same compounds taught by the Gokochi et al reference to be optical acid generators, thus it further demonstrates that they may be used as either.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hatakeyama et al (2004/0241577 and 2004/0259037), and Thackeray et al (6,451,503 and 6,472,128) are cited for their teachings of similar materials.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda C. Walke whose telephone number is 571-272-1337. The examiner can normally be reached on M-R 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Amanda C. Walke
Amanda C Walke
Examiner
Art Unit 1752

ACW
September 17, 2005